GOVERNMENT OF INDIA
SCIENCE AND TECHNOLOGY
LOK SABHA

STARRED QUESTION NO:262
ANSWERED ON:16.03.2016
Kit to Identify Adulteration in Milk
Shewale Shri Rahul Ramesh

Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:

(a) whether a new technology to analyse and detect adulteration in milk has been developed by the Central Electronics Engineering Research Institute and if so, the details thereof;
(b) whether any survey/study has been commissioned to ascertain the availability of adulterated milk in the market and if so, the details thereof;
(c) the extent to which the new technology is likely to tackle national level health hazard on account of adulteration of milk in the country along with one time and recurring cost of this new technology; and
(d) whether the Government has prepared any plan to patent and popularise the use of new technology by various stakeholders and if so, the details in this regard?

Answer

MINISTER FOR SCIENCE AND TECHNOLOGY AND EARTH SCIENCES

(Dr. HARSH VARDHAN)

(a),(b),(c)&(d) : A Statement is laid on the Table of the House.

THE REPLY IN PURSUANCE OF THE STATEMENT MADE IN ANSWER TO THE LOK SABHA STARRED QUESTION NO. *262 BY THE HON'BLE MINISTER OF SCIENCE & TECHNOLOGY AND EARTH SCIENCES.

Part wise reply:

(a) Yes, Madam. A new technology to analyze and detect adulteration in milk has been developed by CSIR-Central Electronics Engineering Research Institute (CSIR-CEERI), Pilani. This technology is novel and is based on acquiring electrochemical fingerprint coupled with multivariate data analysis techniques. There are no systems currently available globally based on similar methods. This innovation represents the first fully Indian "concept to implementation" effort in the instrumentation related to milk and dairy, addressing an unmet need.

(b) No, Madam. CSIR-CEERI has not conducted any survey/study to ascertain the availability of adulterated milk in the market. The R&D work was started on the basis of industry requirement in dairy sector and reports/survey available during the time in electronic and print media. According to the recent reports, over 68 percent of milk in the country does not conform to the standards set by the Food Safety and Standards Authority of India (FSSAI; based on the national vide survey conducted by FSSI in 2011).According to the FSSAIs 2011 survey, the most common adulterant was found to be the addition of water, besides, other adulterants such as glucose, skimmed milk powder, urea, detergent, refined oil, caustic soda and white paint which, according to studies, are "very hazardous" to human life and can cause serious diseases.

(c) Milk being commonly used in everyday diet, if adulterated poses serious health hazards. Deeper understanding of the role of Milk in human health, as a critical component has stimulated interest in the development of the present technology which is cost-effective. The adoption and deployment of the innovation in as many villages and milk societies possible would be a step forward in enhancing and implementing, the standards and quality of the milk. Besides it can help in generating employment. The technology excels in its ability to detect known and unknown adulterants in milk and coupled with its low cost has a great potential to be used widely in the dairy industry. This technology has been transferred to two industries, namely M/s Rajasthan Electronics & Instruments (REIL), Jaipur (a Mini Ratna PSU) in December 2012 and M/s Alpine Technologies, Surat in December 2015 for manufacturing and commercialization. M/s REIL has manufactured system based on the technology costing around Rs. 70,000/- to Rs.100,000/-. The other industry is in the process of setting up manufacturing facilities. The recurring cost for testing a milk sample through this new technology is around Rs.0.05 - 0.10. The sample measurement time is nearly 40-45 seconds.

(d) The following two Indian Patents were filed related to innovation and thereof developed system:
(1) PC Panchariya, AH Kiranmayee & S. Raghunath, "A novel method and a system based on voltammetry for characterization and discrimination of liquids" India, 0568/DEL/ 2010A.

(2) PC Panchariya, AH Kiranmayee, R.S. Chouhan, & P. Bhanu Prasad, "A method and system for detection of synthetic milk in natural milk", India, 0198/DEL/2013A.
Efforts are on to enhance the deployment of the technology.

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